

6. Electrostatics with Dielectrics

Self-test questions

1. Determine the electric field and potential difference for parallel plates with charges $+Q$ and $-Q$ if the region between the plates is filled with an insulator with dielectric constant κ .
2. Determine the dipole moment of a dielectric sphere in a uniform applied electric field. What then is the polarizability of a dielectric sphere?
3. Determine the electric field if there is a point charge q at $z = h$ and a pane of glass whose upper surface coincides with the xy plane.